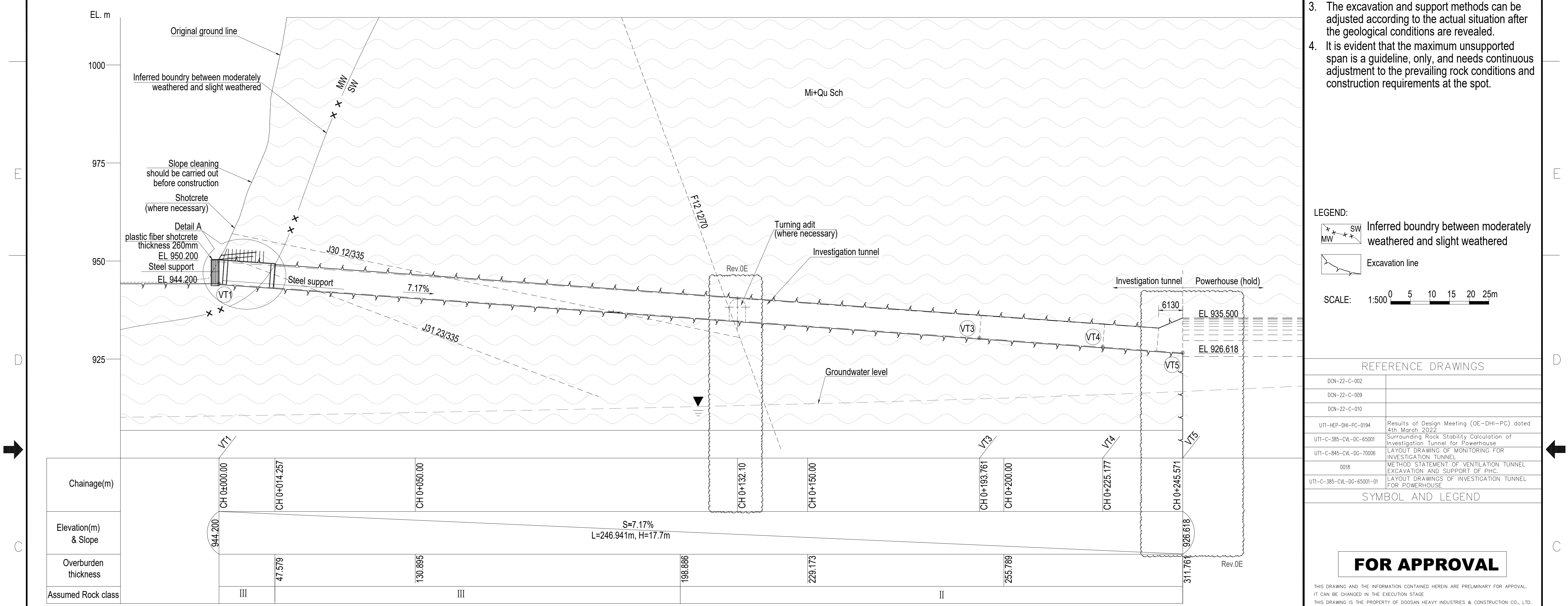


F

LONGITUDINAL PROFILE OF INVESTIGATION TUNNEL FOR P/H

F



F

E

D

C

B

A

F

E

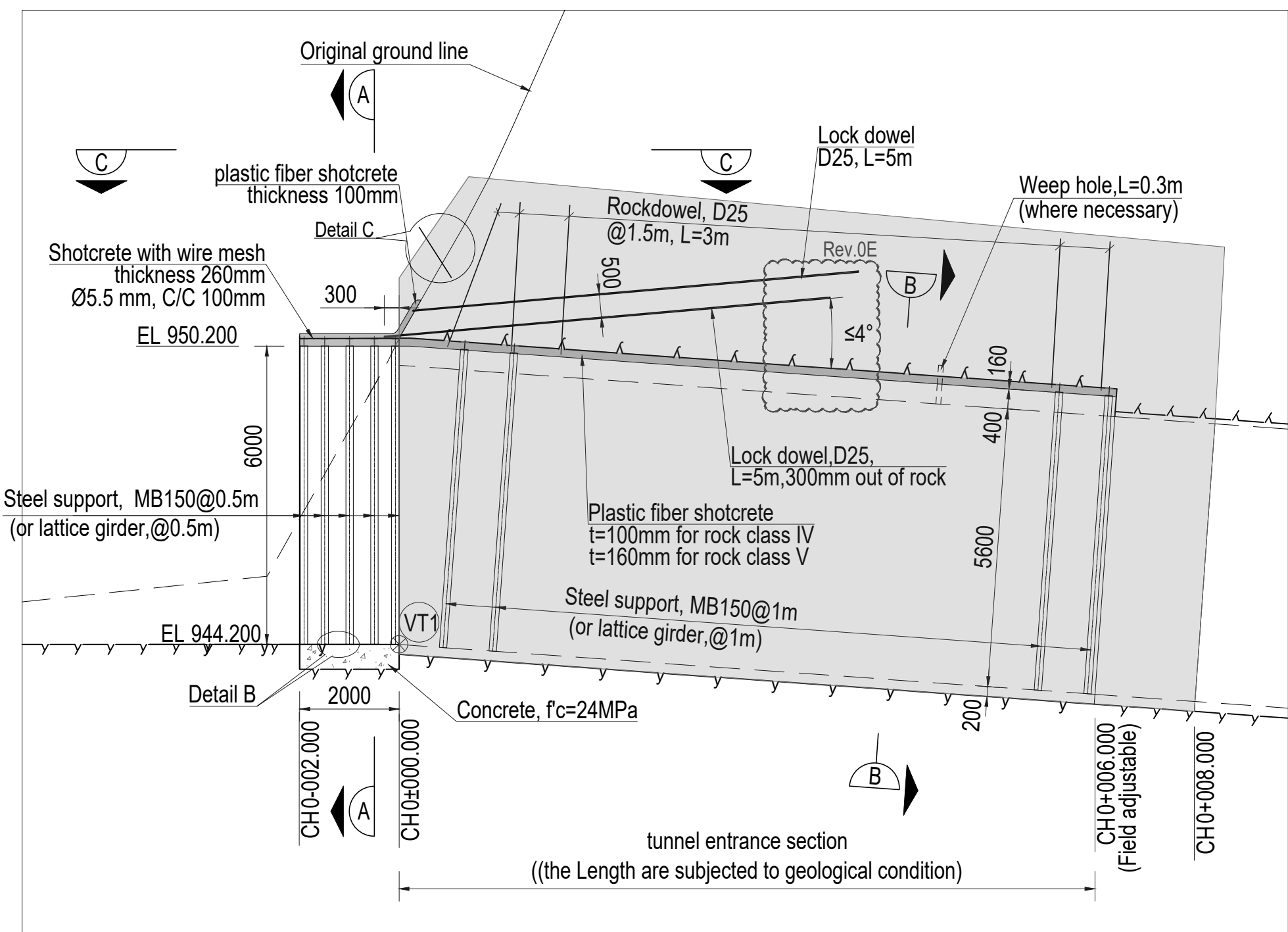
D

C

B

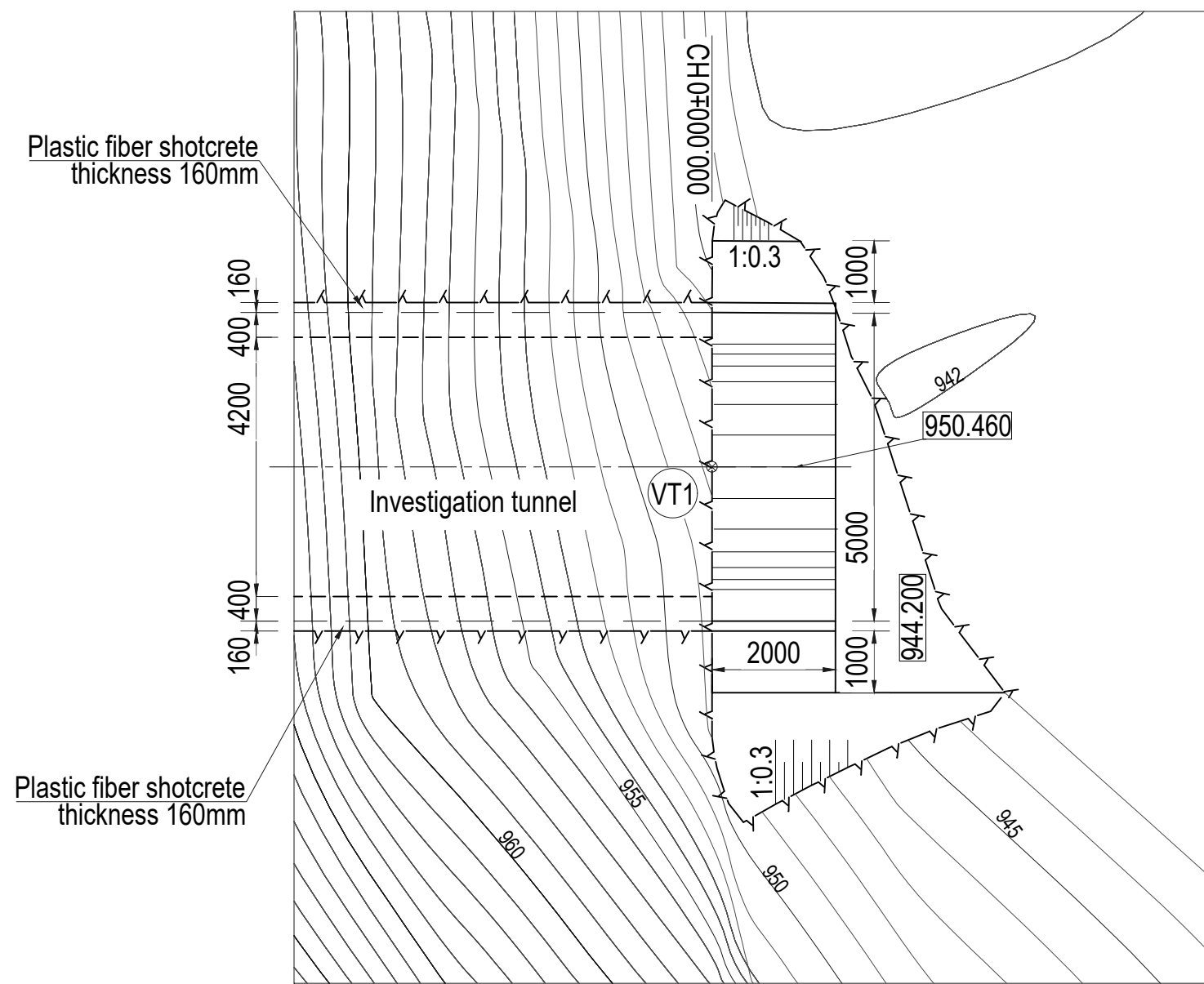
A

DETAIL A
1:100

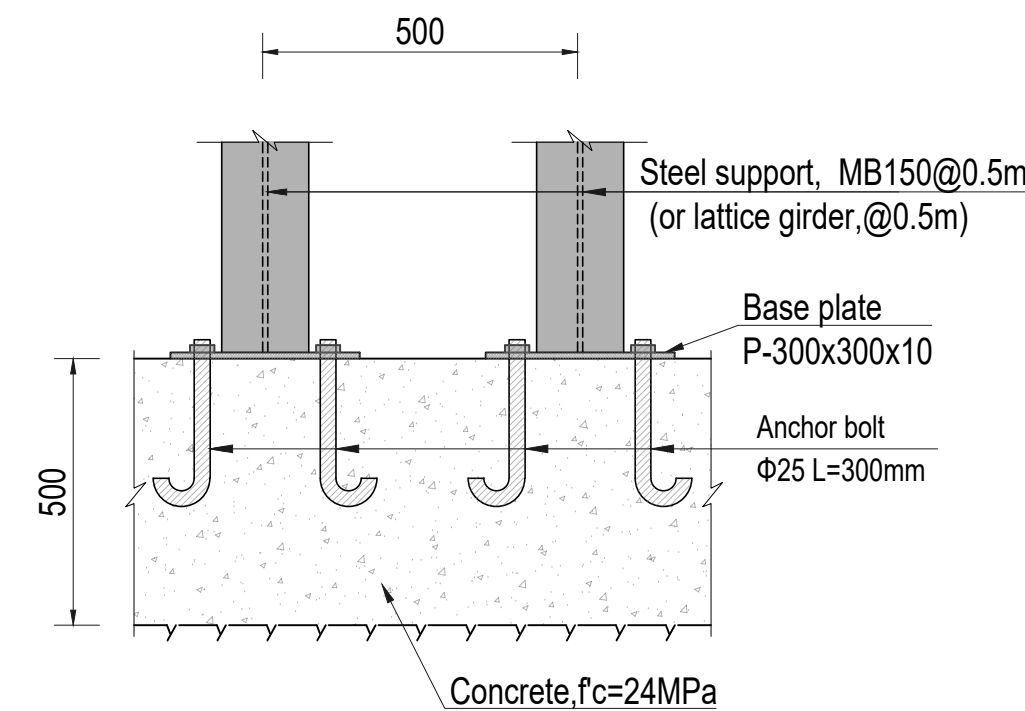


NOTE: During trial blasting, the part from CH0+000.000 to CH0+008.000, as shown in the shaded section, had been successfully excavated and supported, and the spacing between the two rows of lock bolt around the tunnel opening is 1m.

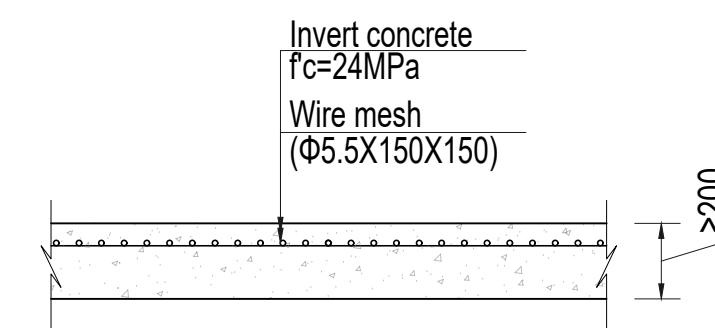
SECTION C - C
1:100



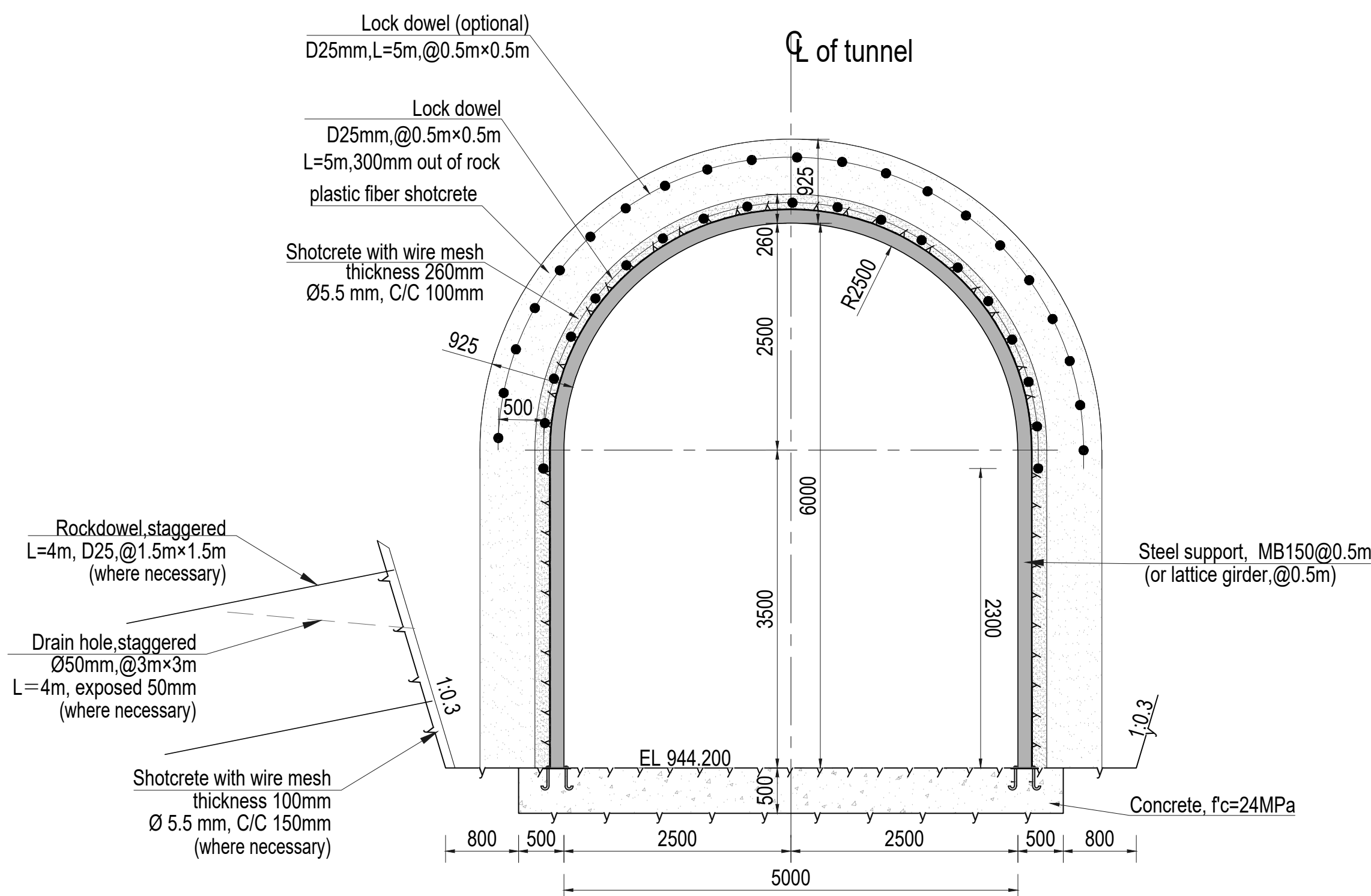
DETAIL B



DETAIL OF INVERT CONCRETE
1:20

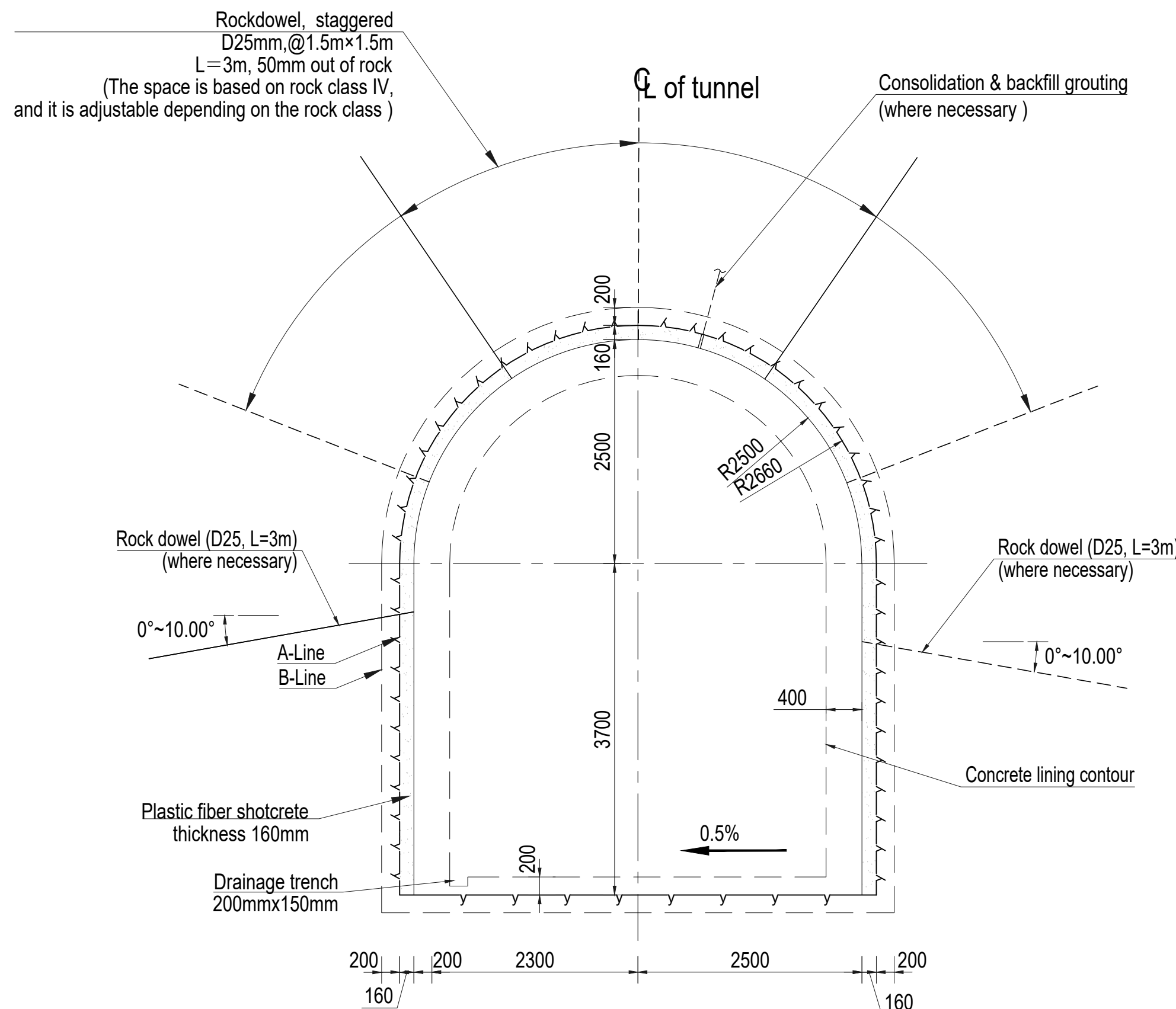


SCHEMATIC DIAGRAM OF OPEN TUNNEL
(SECTION A - A) 1:50



NOTE: The open tunnel had been successfully excavated and supported, and the two rows of lock dowels around the tunnel opening had been installed as the distance of 1m×1m. The support above schematic diagram was tailored to Class III, or Class IV.

SUPPORT TYPE OF TUNNEL ENTRANCE SECTION
(SECTION B - B) 1:50

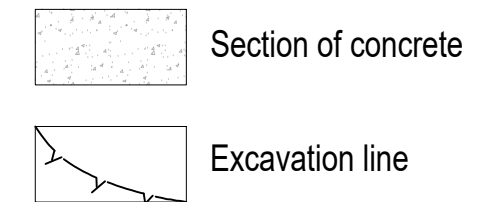


NOTE: This drawing... in the execution stage, with written approval of the OE.

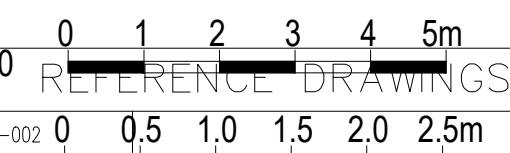
NOTE

1. This set of drawings are the excavation and initial support of investigation tunnel for powerhouse.
2. The cylinder specified compressive strength of shotcrete and cement mortar at 28 days of age is 25MPa.
3. The specified compressive strength of concrete is the cylinder strength at age of 28 days.
4. The yield strength and of steel is 250MPa.
5. Rust preventive compound will be sprayed on exposed surface of steel structure.
6. Symbol description:
A-Line is the design excavation line.
B-Line is the overbreak line.
R denotes round bar, yield strength of the round bar is 280MPa.
D denotes deformed bar, yield strength of the deformed bar is 500MPa;
7. See subsequent drawings for concrete structure and reinforcement.

LEGEND:



SCALE:



REFERENCE DRAWINGS

DOH-28-C-002	1:50	0 0.5 1.0 1.5 2.0 2.5m
DOH-22-C-009		
DOH-22-C-010		
UT1-HEP-DH-PC-0194		Results of Design Meeting (OE-DHI-PC) dated 4th March, 2022
UT1-C-385-CVL-DG-65001		Surrounding Rock Stability Calculation of Investigation Tunnel for Powerhouse
UT1-C-845-CVL-DG-70006		LAYOUT DRAWING OF MONITORING FOR INVESTIGATION TUNNEL
0018		METHOD STATEMENT OF VENTILATION TUNNEL EXCAVATION AND SUPPORT OF PHC.
UT1-C-385-CVL-DG-65001-01		LAYOUT DRAWINGS OF INVESTIGATION TUNNEL FOR POWERHOUSE

SYMBOL AND LEGEND

FOR APPROVAL

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0E	04.Jun., 2022	RN-0053	ZHANG JI QIANG	LIU BO	LI WEI GONG WANG HUA HENG
D	31.Jan., 2022	FOR REVIEW	ZHANG JI QIANG	LIU BO	LI WEI GONG WANG HUA HENG
C	26.Nov., 2021	FOR REVIEW	ZHANG JI QIANG	LIU BO	LI WEI GONG WANG HUA HENG
B	10.Oct., 2021	FOR REVIEW	ZHANG JI QIANG	LIU BO	LI WEI GONG WANG HUA HENG
A	25.MAY, 2021	FOR REVIEW	ZHANG JI QIANG	LIU BO	LI WEI GONG WANG HUA HENG
REV. NO.	DATE	DESCRIPTION	DRAWN	CHKD.	APPD.

PROJECT TITLE
Upper Trishuli-1 HEP (216MW)

OWNER
NWEDC
NIPAL WATER AND ENERGY
DEVELOPMENT CO. (PVT.) LTD.

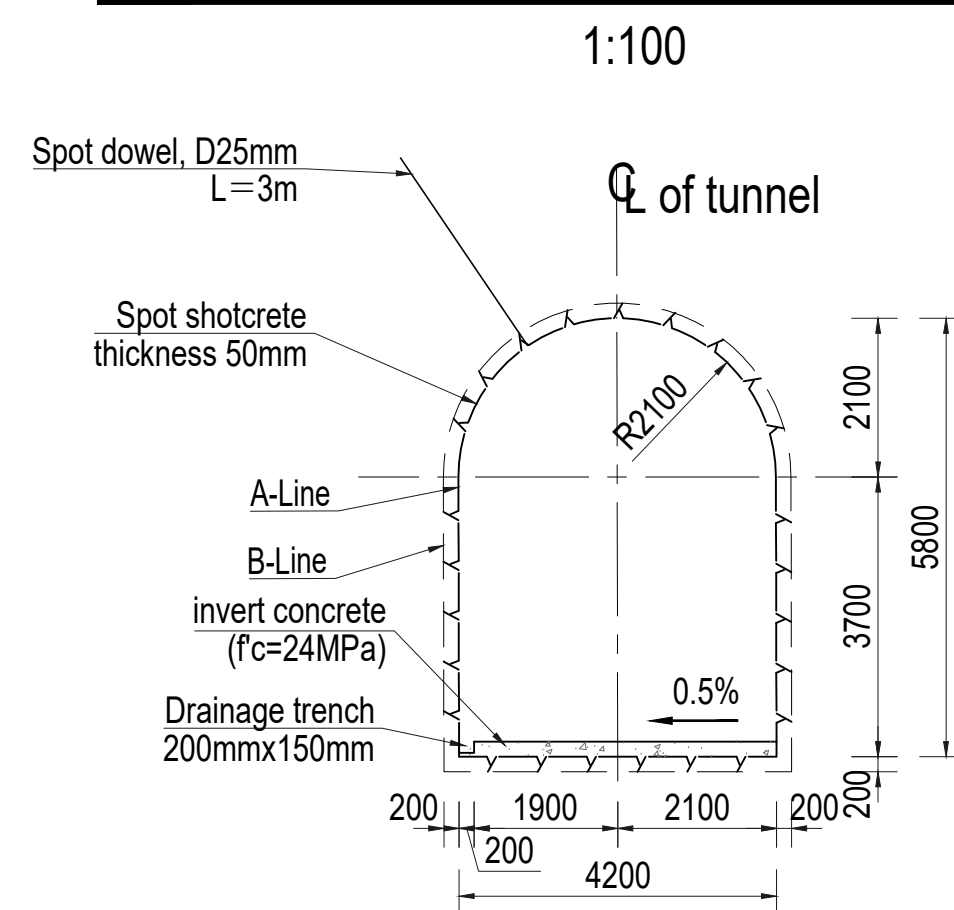
OWNER'S ENGINEER
TRACTEBEL
ENGINTE
jade
CONSULT

CONTRACTOR
DOOSAN Enerbility

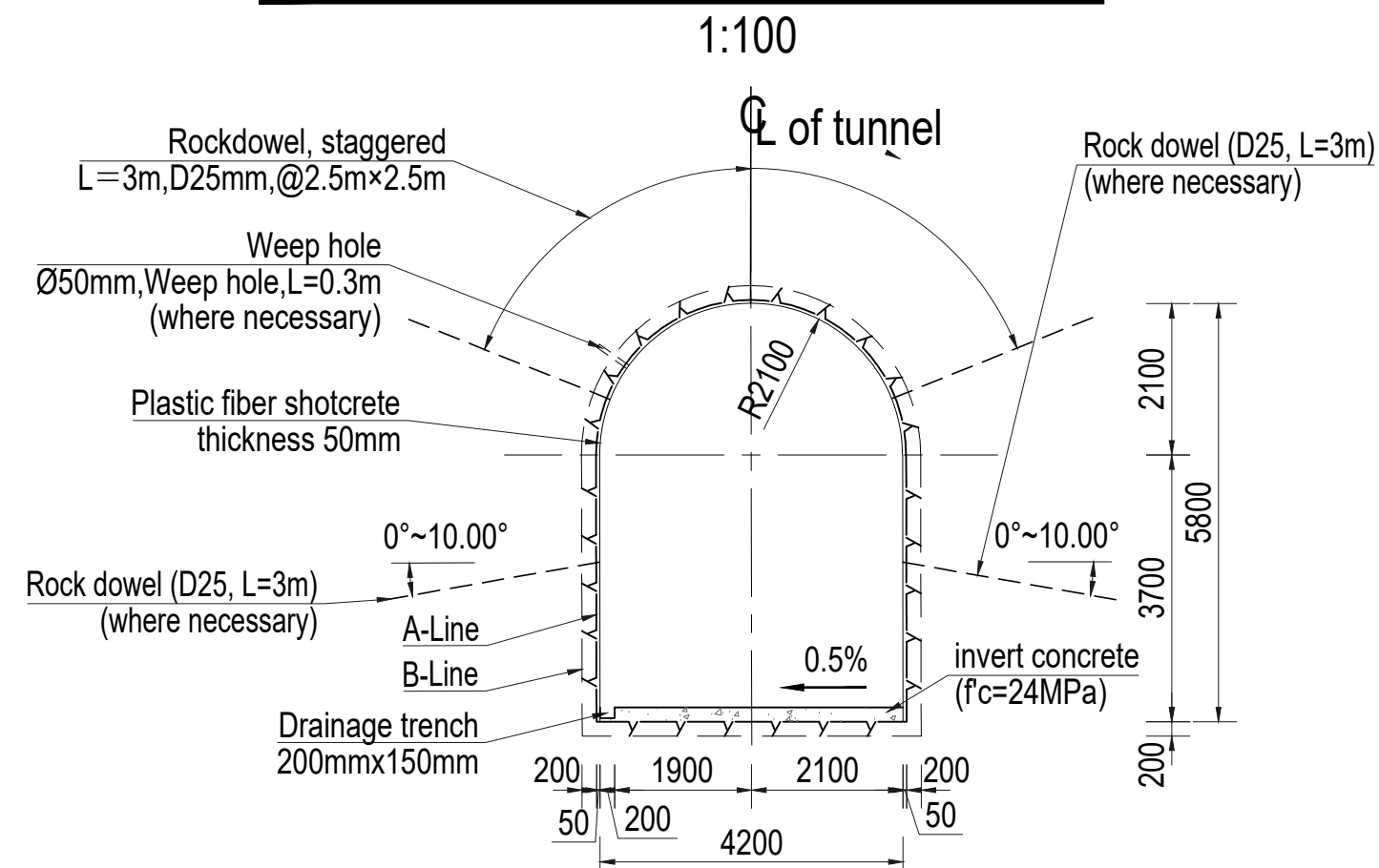
DRAWING TITLE
EXCAVATION AND INITIAL SUPPORT DRAWINGS
OF INVESTIGATION TUNNEL FOR POWERHOUSE (2/4)

INDEX	DRAWING NUMBER	SHEET NO.	REV. NO.
A	UT1-C-385-CVL-DG-65002-02	2 OF 4	0E

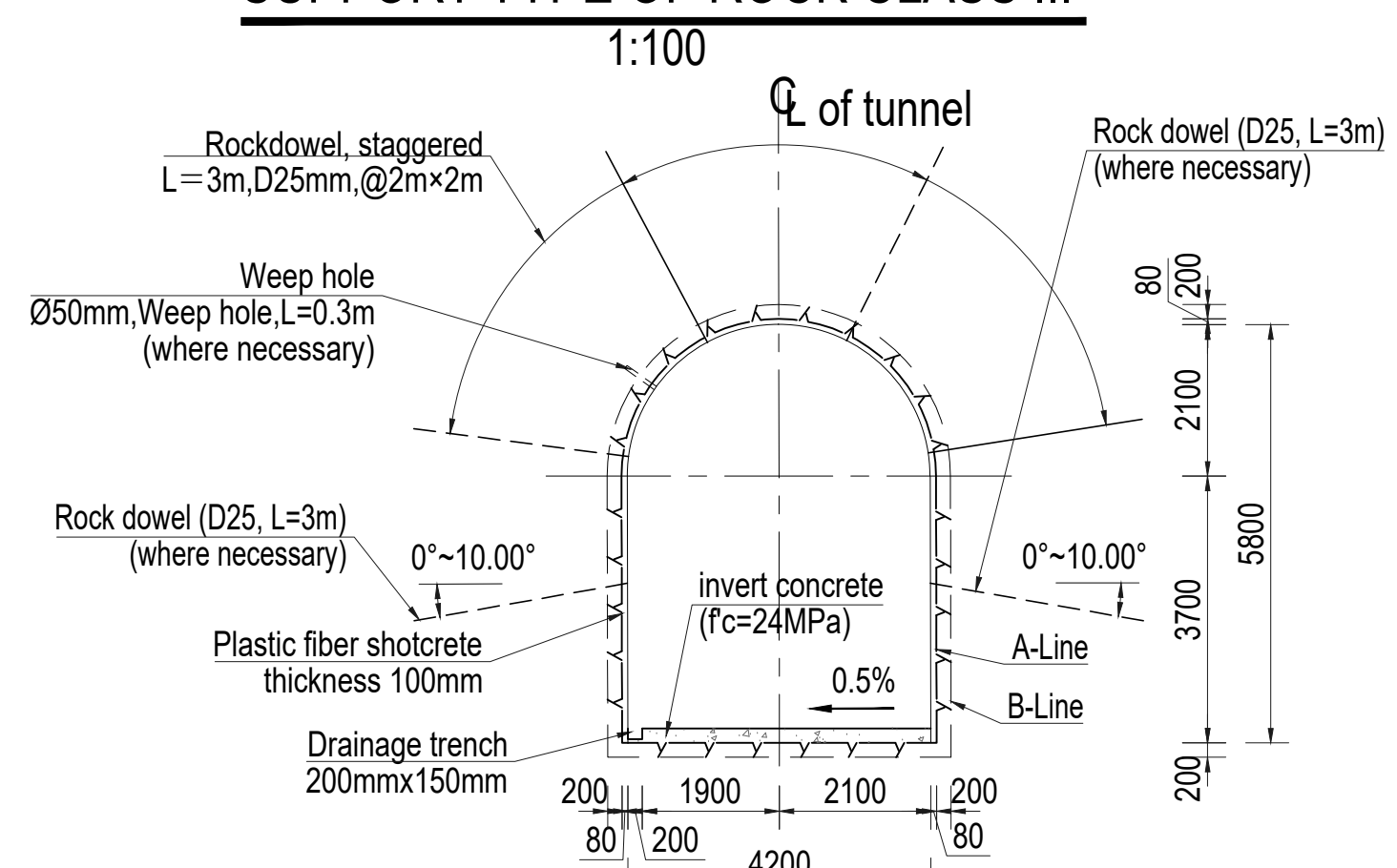
SUPPORT TYPE OF ROCK CLASS I



SUPPORT TYPE OF ROCK CLASS II

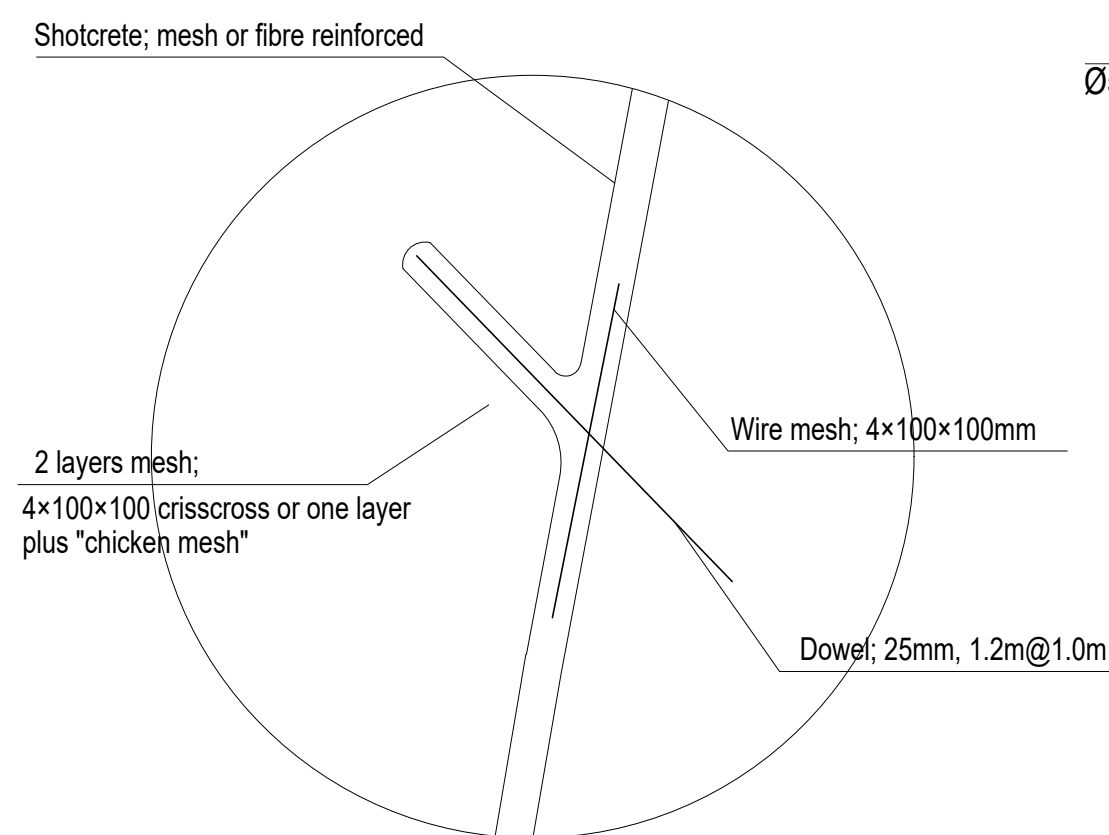


SUPPORT TYPE OF ROCK CLASS III

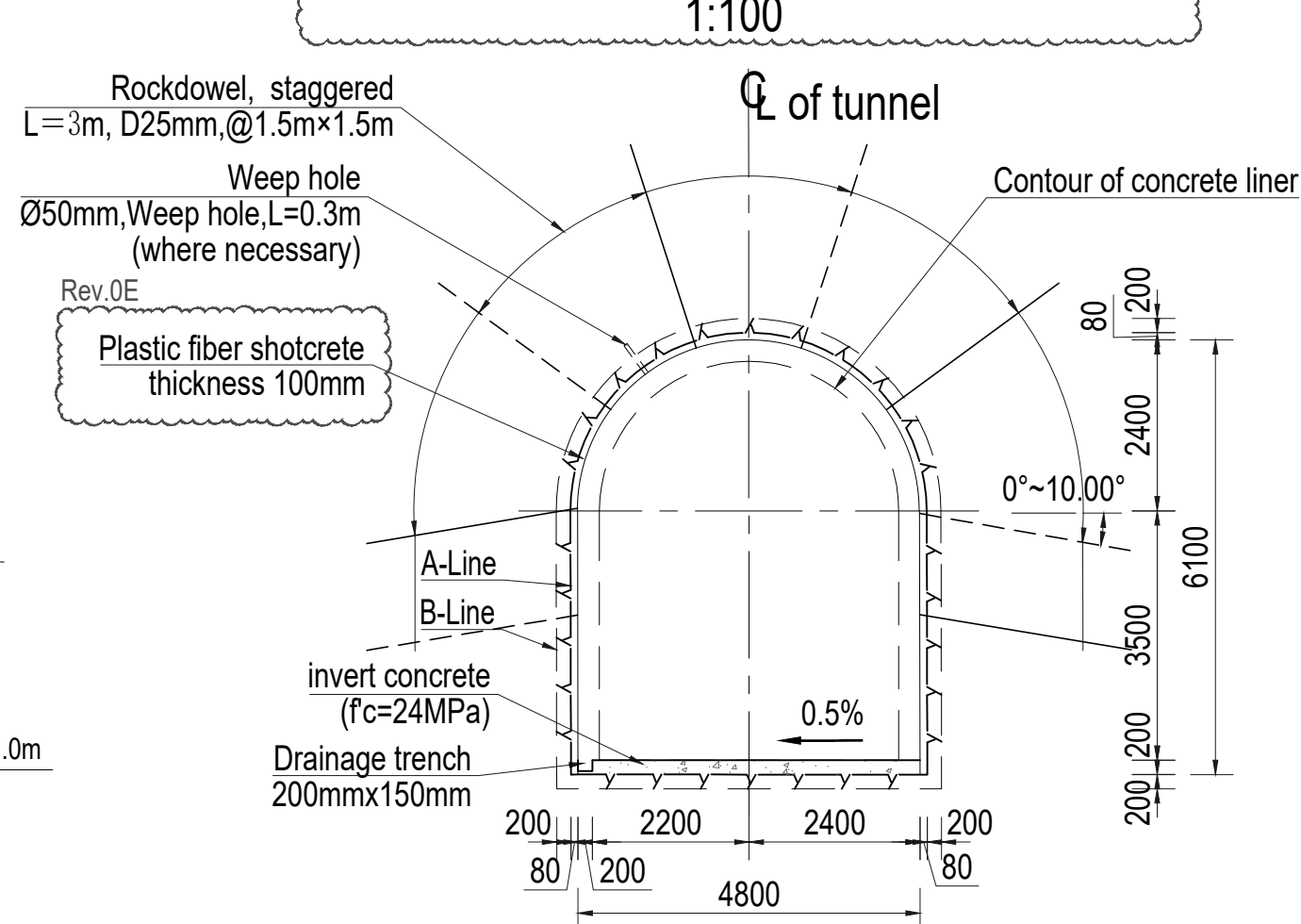


Detail C

1:20

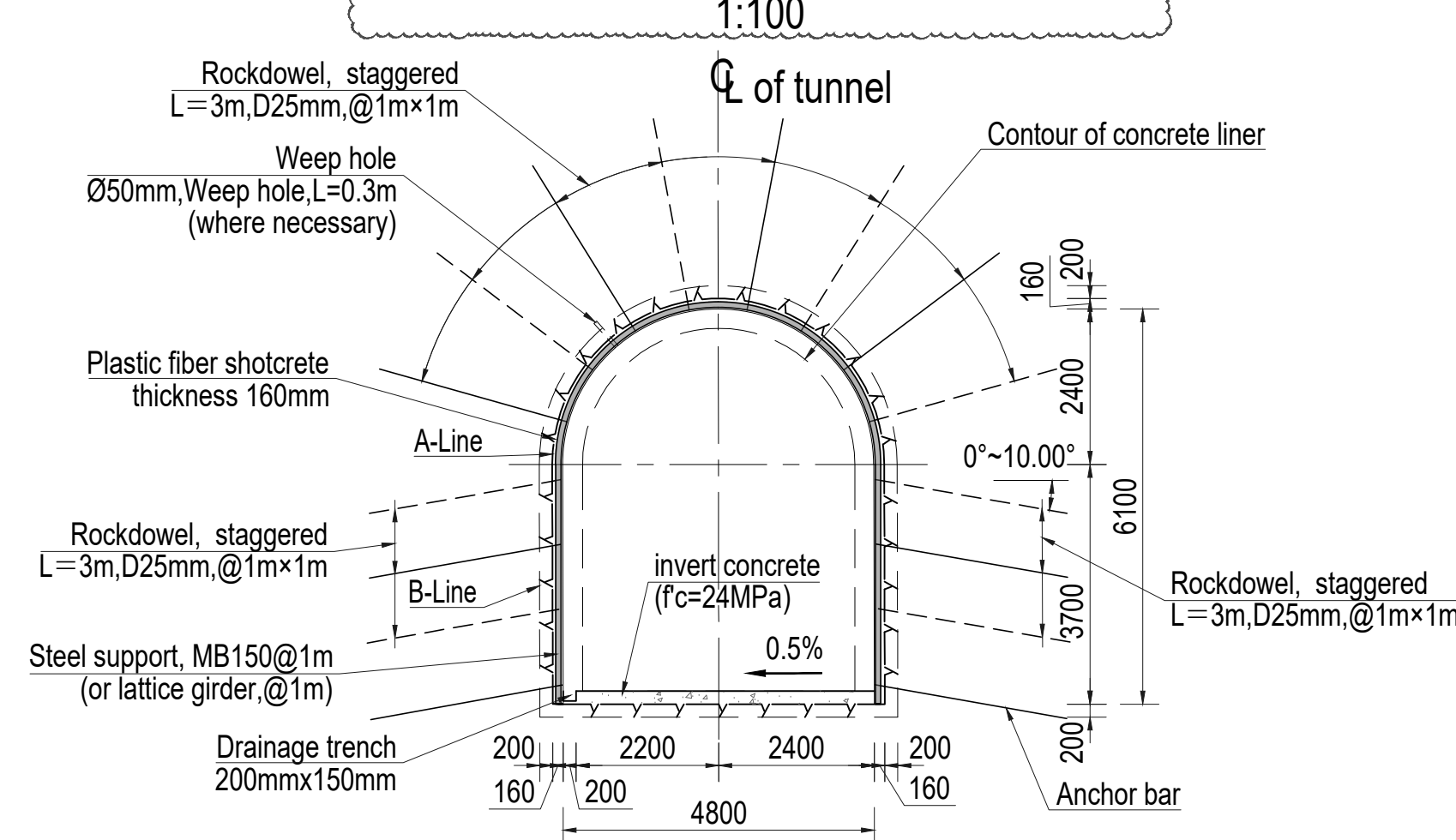


SUPPORT TYPE OF ROCK CLASS IV (Without steel support)

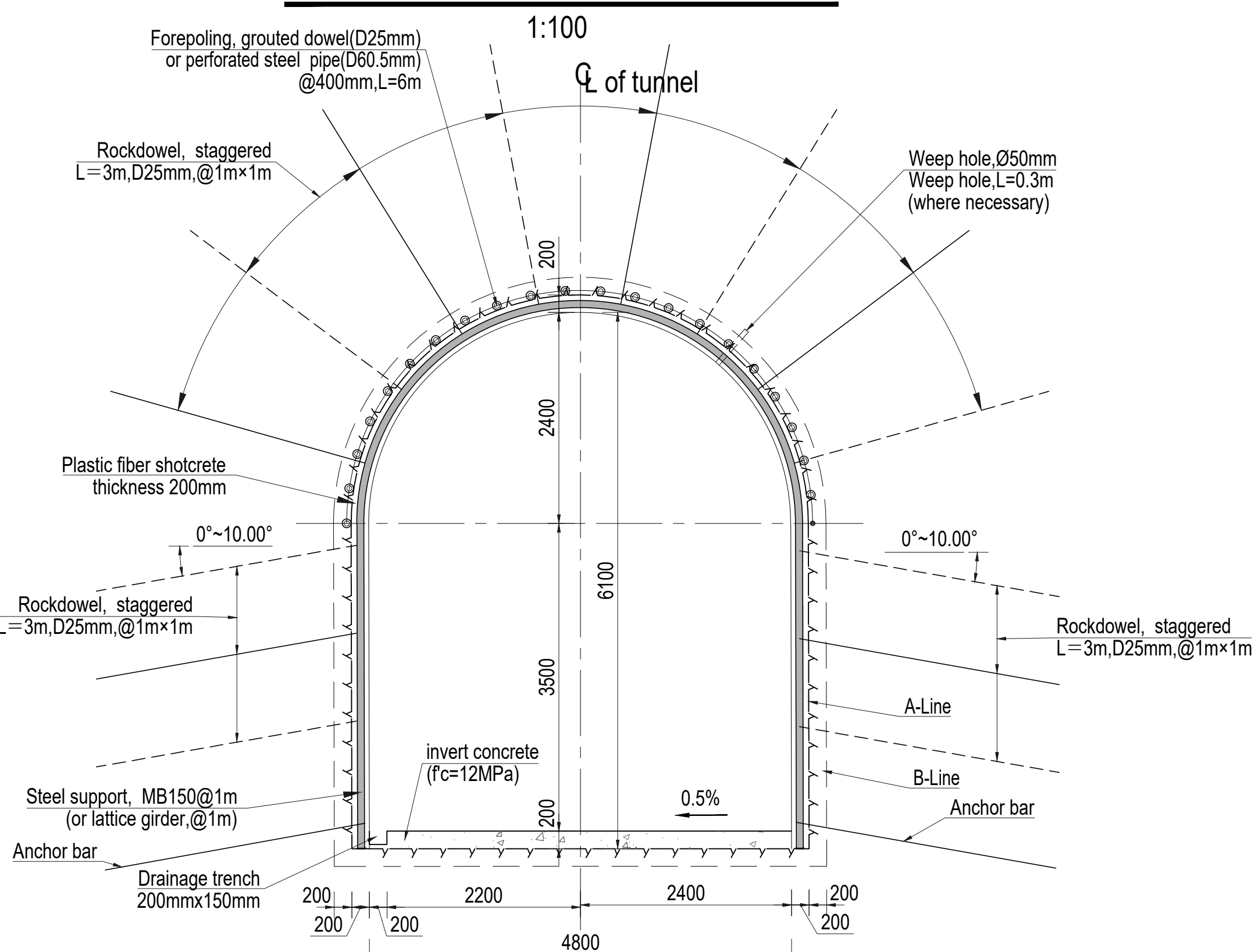


Note: If steel support is required in rock class IV, the outline of tunnel will be adjusted and consistent with the tunnel geometry of rock class V.

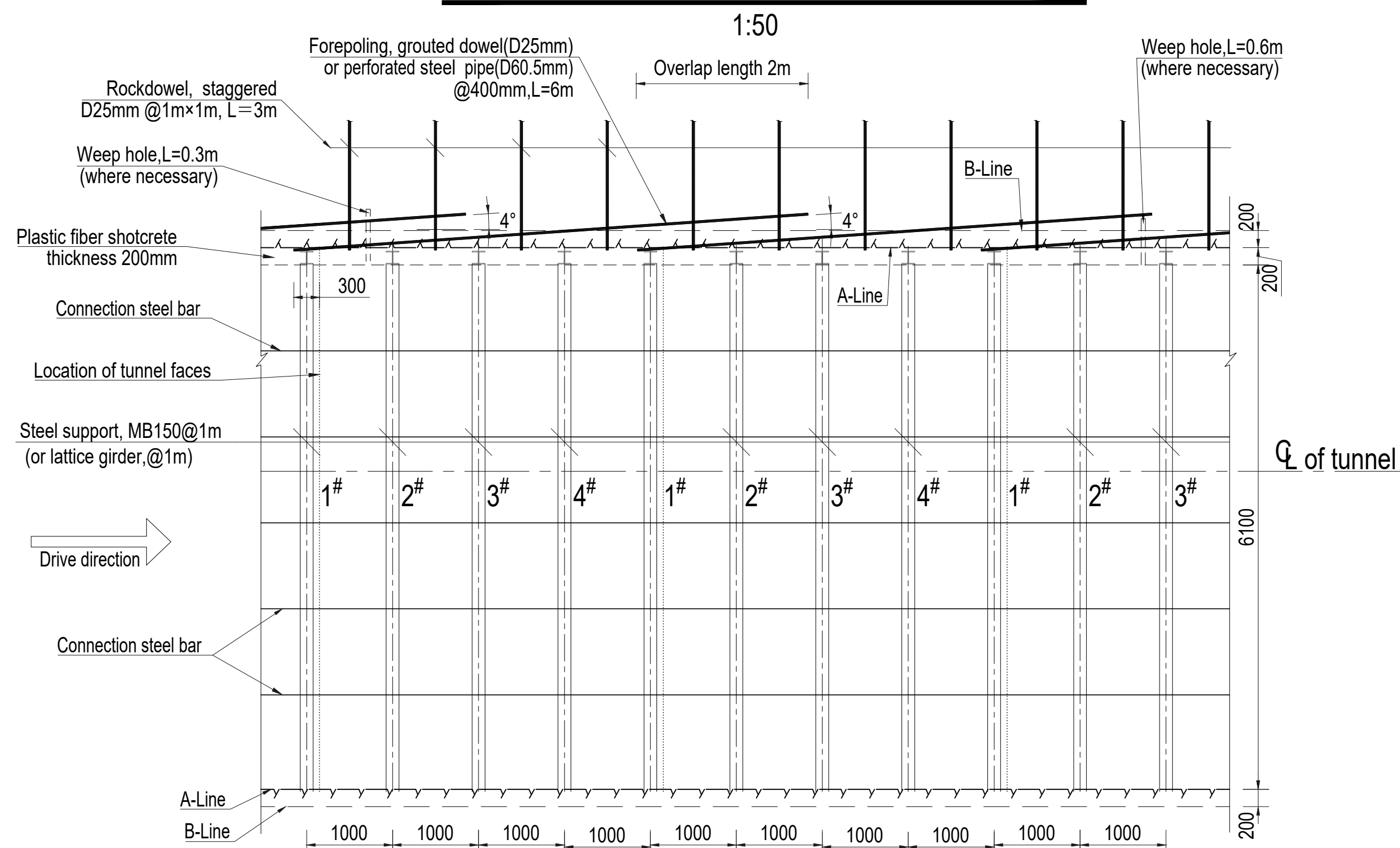
SUPPORT TYPE OF ROCK CLASS IV (With steel support)



ACROSS SECTION OF FOREPOLING



LONGITUDINAL PROFILE OF FOREPOLING



NOTE: (1)The gaps behind the steel ribs need always be filled with shotcrete and/or concrete, not with rock blocks.
(2)The excavation profile may need to be adjusted to a "saw-tooth profile" and size of ribs/girders may also be adjusted.

NOTE

1. This set of drawings are the excavation and initial support of investigation tunnel for powerhouse.
2. The forepoling is mainly used in the tunnel section with poor surrounding rock geology, which should be used together with dowel and steel support (or lattice girder), and the spacing of dowel should be consistent with that of steel support.
3. The detail of weep holes, rock dowel, steel support and steel lattice girder see the drawing No. UT1-C-000-CVL-DG-40001.
4. Other see sheet 2.

SCALE:

1:100 0 1 2 3 4 5m

1:50 0 1 2 3 4 5m

1:20 0 1 2 3 4 5m

1:10 0 1 2 3 4 5m

1:5 0 1 2 3 4 5m

1:2 0 1 2 3 4 5m

1:1 0 1 2 3 4 5m

1:0.5 0 1 2 3 4 5m

1:0.2 0 1 2 3 4 5m

1:0.1 0 1 2 3 4 5m

1:0.05 0 1 2 3 4 5m

1:0.02 0 1 2 3 4 5m

1:0.01 0 1 2 3 4 5m

SYMBOL AND LEGEND

FOR APPROVAL

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B	10 Oct., 2021	FOR REVIEW	ZHANG JI QIANG	LIU BO	LI WEI GONG
A	25 MAY, 2021	FOR REVIEW	ZHANG JI QIANG	LIU BO	LI WEI GONG

PROJECT TITLE
Upper Trishuli-1 HEP (216MW)

OWNER
NWEDC
NORWEL WATER AND ENERGY DEVELOPMENT CO., LTD.

OWNER'S ENGINEER
TRACTEBEL
ENGINTE
JADE CONSULT

CONTRACTOR
DOOSAN Enerbility

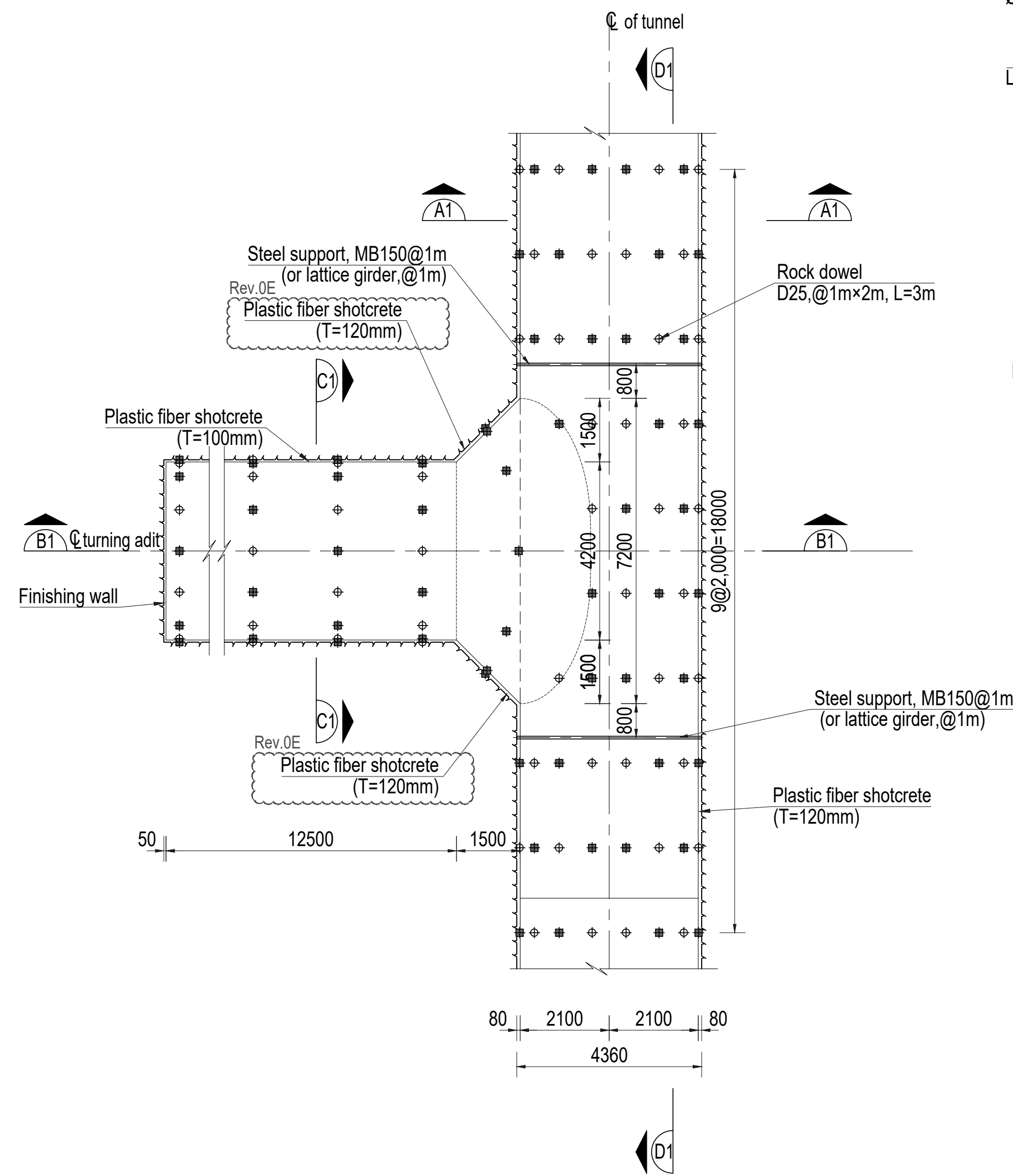
DRAWING TITLE
EXCAVATION AND INITIAL SUPPORT DRAWINGS OF INVESTIGATION TUNNEL FOR POWERHOUSE (3/4)

INDEX	DRAWING NUMBER	SHEET NO.	REV. NO.
A	UT1-C-385-CVL-DG-65002-03	3 OF 4	0E

A1 (594 x 841 MM) 1

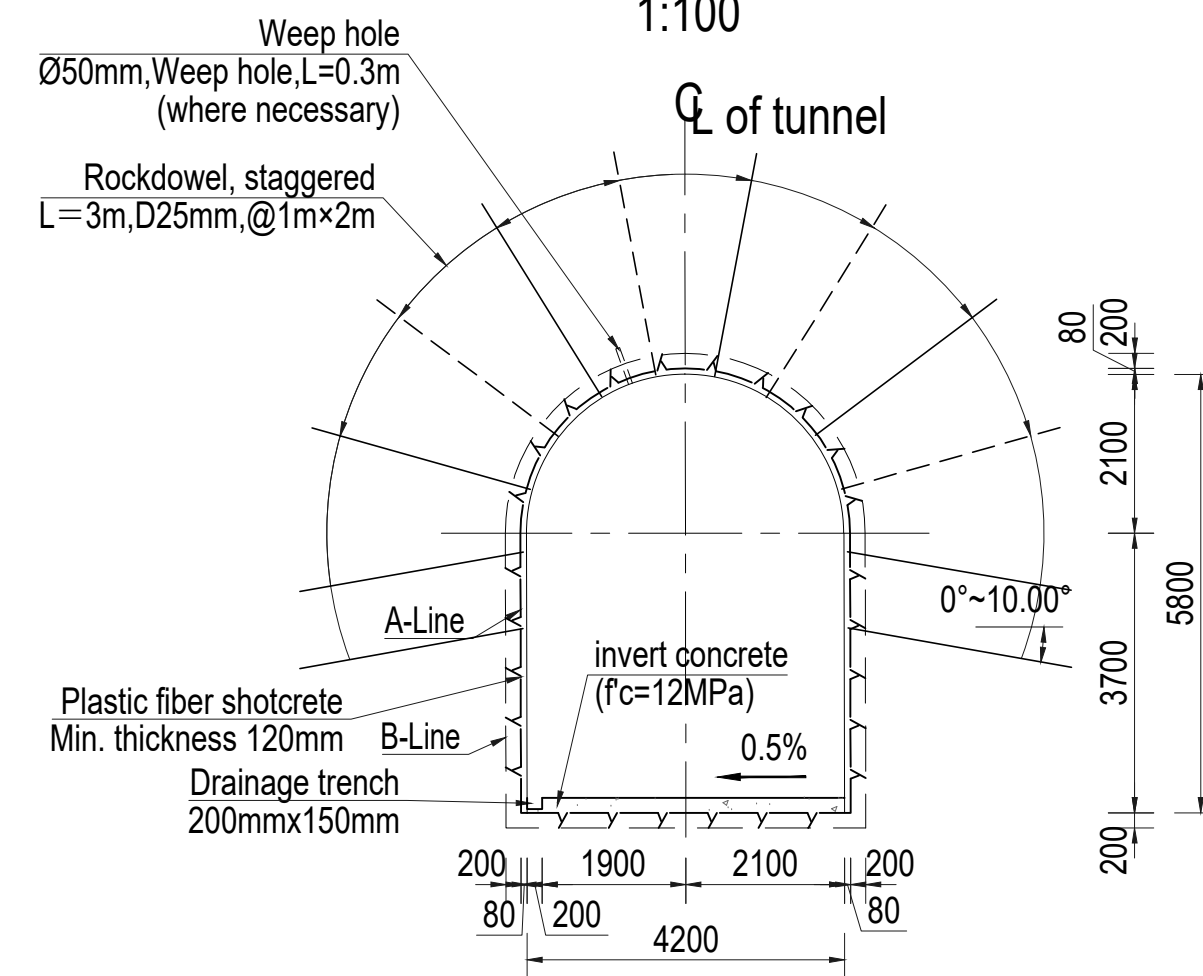
PLAN OF TURNING ADIT(Rock Class III)

1:100



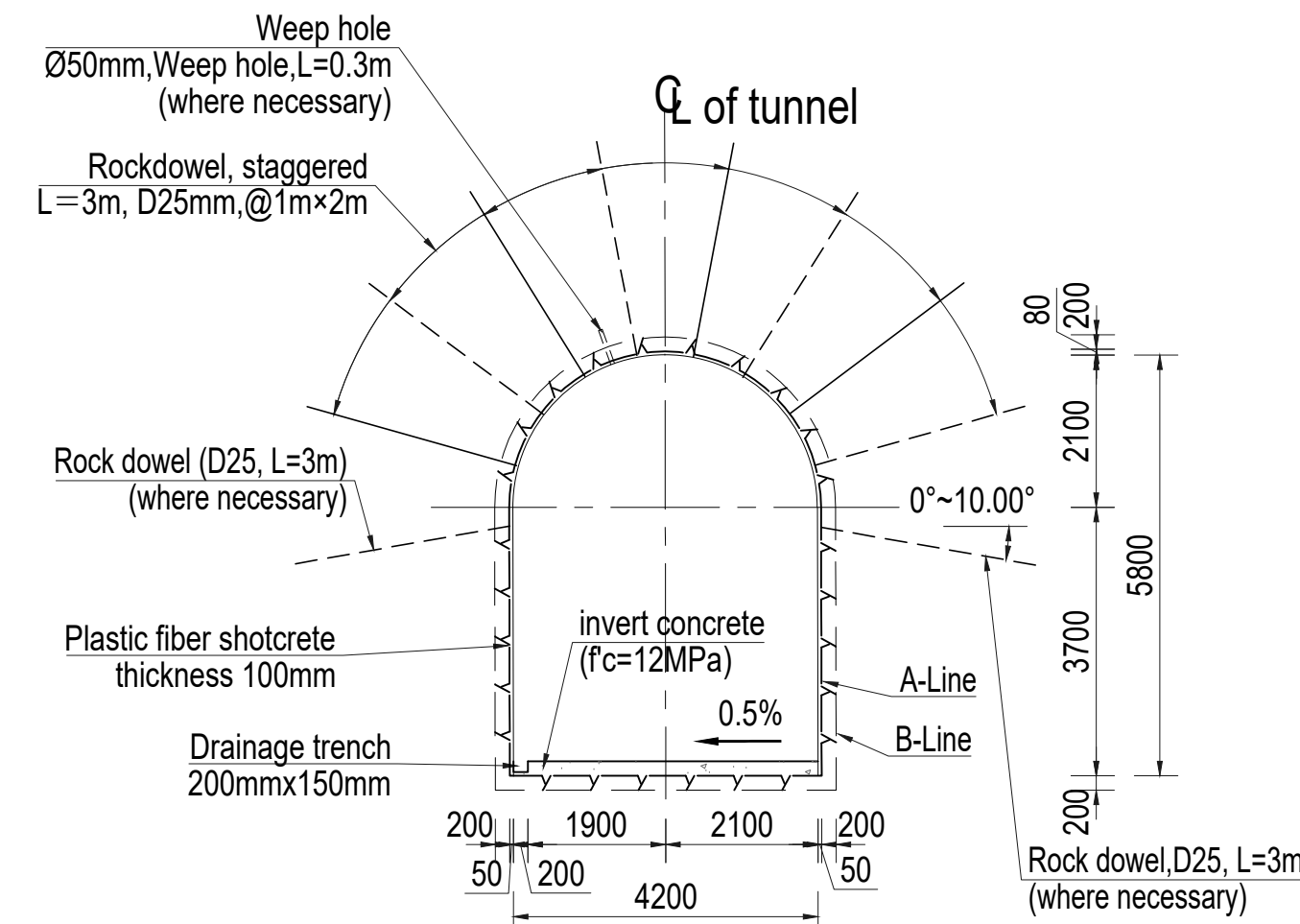
SECTION A1-A1

1:100



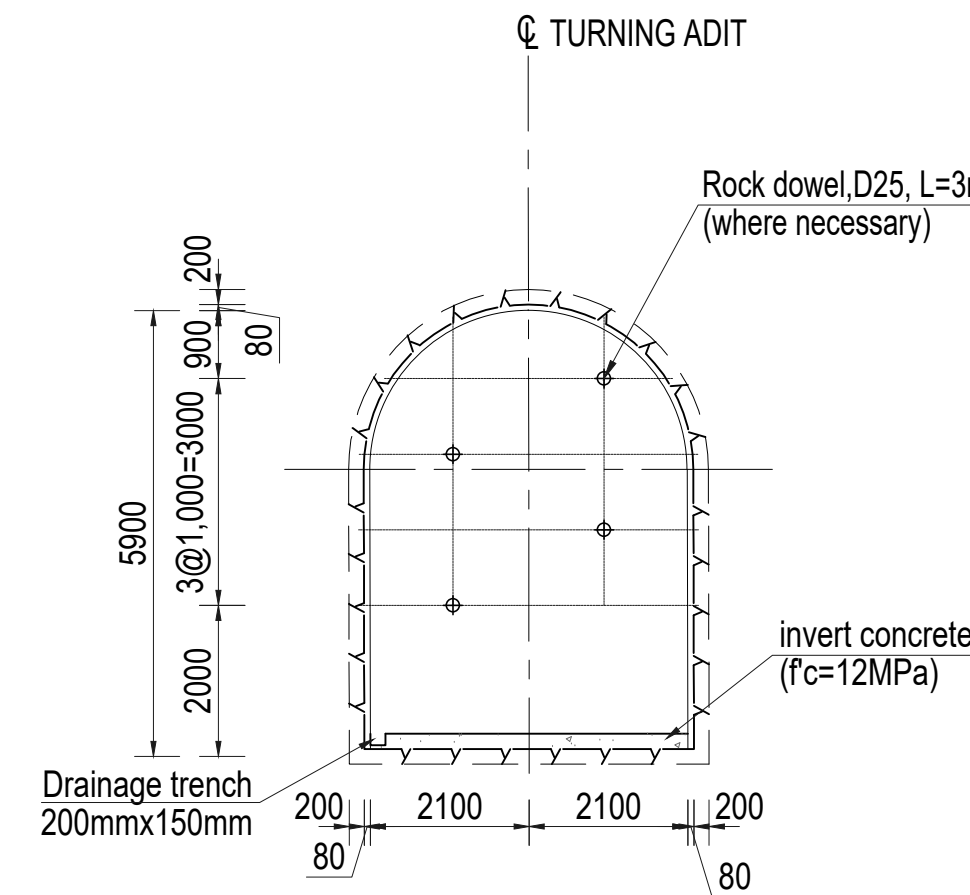
SECTION C1-C1

1:100



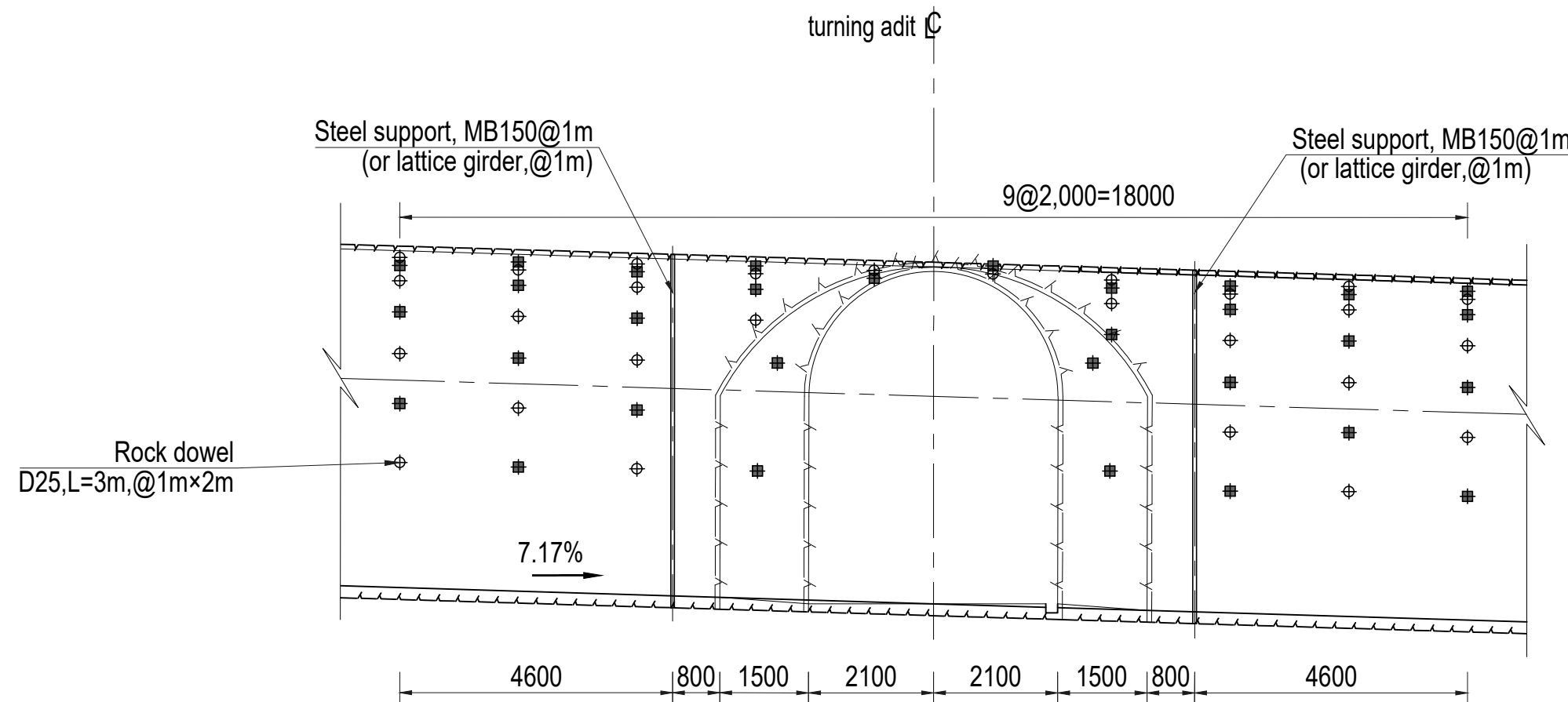
FINISHING WALL

1:100



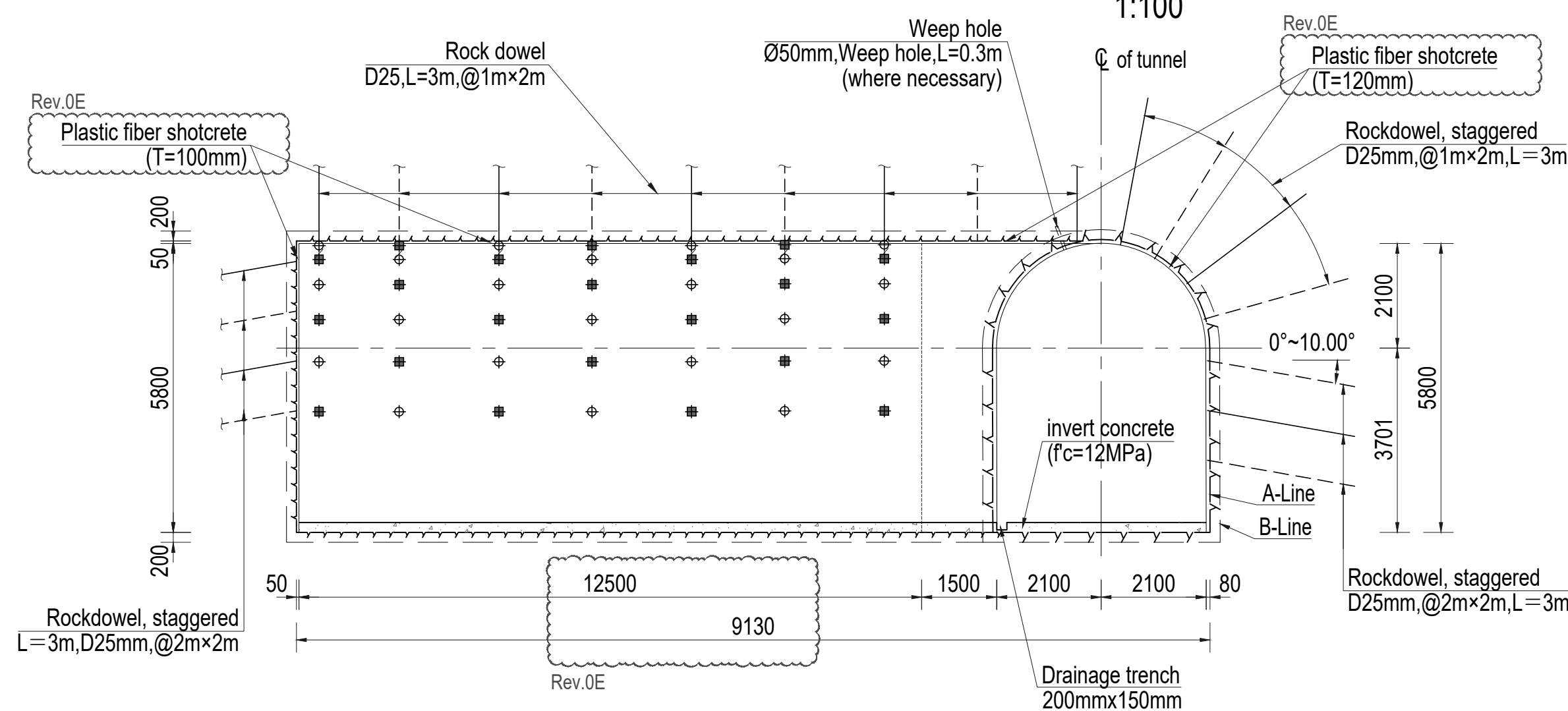
SECTION D1-D1

1:100



SECTION B1-B1

1:100



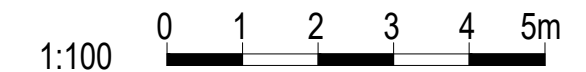
NOTE

1. This set of drawings are the excavation and support of headrace tunnel (include intake tunnel).
2. All dimensions are in millimeters, and coordinates, chainages & elevations are in meters.
3. Other see sheet 2.

LEGEND:

- System rockdowel
- Additional rockdowel
- Section of concrete

Scale:



REFERENCE DRAWINGS

DOH-22-C-002	
DOH-22-C-009	
DOH-22-C-010	
UT1-HEP-DH-PC-0194	Results of Design Meeting (OE-DHI-PC) dated 4th March, 2022
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UT1-C-385-CVL-DG-65001-01	LAYOUT DRAWINGS OF INVESTIGATION TUNNEL FOR POWERHOUSE

SYMBOL AND LEGEND

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OWNER'S ENGINEER
TRACTEBEL
ENGIE
jade CONSULT

CONTRACTOR
DOOSAN Enerbility

DRAWING TITLE
EXCAVATION AND INITIAL SUPPORT DRAWINGS OF INVESTIGATION TUNNEL FOR POWERHOUSE (4/4)

INDEX	DRAWING NUMBER	SHEET NO.	REV. NO.
A	UT1-C-150-CVL-DG-65002-04	4 OF 4	OE

A1 (594 x 841 MM)